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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/723,133	11/25/2003	Eric A. Jacobsen	21058/0209564-US0	9445
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EXAMINER TORRES, JOSEPH D				
ART UNIT		PAPER NUMBER		
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/723,133

Applicant(s)

JACOBSEN ET AL.

Examiner

Joseph D. Torres

Art Unit

2112

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 05/27/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-41 is/are pending in the application.
- 4a) Of the above claim(s) 10-41 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-8508)
- Paper No(s)/Mail Date 10/14/2005, 10/07/2005
- 4) ☐ Interview Summary (PTO-413)
- Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Election/Restrictions

Applicant's election without traverse of Group I, claims 1-9, in the reply filed on 05/27/2008 is acknowledged.

Claims 10-41 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to nonelected inventions, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 05/27/2008.

Claim Objections

Claims 4 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 4 fails to recite any limitation in the form of a step further limiting the method of encoding of claim 1. Claim 4 instead recites that code rates set in claim 2 are set on the basis of a forward error correction algorithm, but does not recite any limitation or limitations in the form of a step or steps that is/are required so that the setting of code rates recited in claim 2 complies with a forward error correction algorithm.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-9 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential steps, such omission amounting to a gap between the steps. See MPEP § 2172.01. Claim 1 recites, "encoding the information to be sent in the block code into one or more codewords in a manner to achieve a similar codeword error probability for each codeword considering available decoding time for decoding a last codeword will be less than available decoding time for decoding a first codeword" [Emphasis added], but fails to recite any limitation or limitations in the form of a step or steps that is/are required so that the "encoding the information to be sent in the block code into one or more codewords" recited in claim 1 complies with and achieves the intended outcome: "a similar codeword error probability for each codeword considering available decoding time for decoding a last codeword will be less than available decoding time for decoding a first codeword". Furthermore, it is not clear from the highlighted recitation and claim language what additional steps are necessary for achieving the intended outcome: "a similar codeword error probability for each codeword considering available decoding time for decoding a last codeword will be less than available decoding time for decoding a first codeword"; or whether just the already recited encoding is sufficient to achieve such a result, the claim is indefinite.

For the purposes of advancing prosecution and since paragraph [0043] in the Applicant's specification recites claim 2 as a positive limitation for achieving the intended outcome: "a similar codeword error probability for each codeword

considering available decoding time for decoding a last codeword will be less than available decoding time for decoding a first codeword"; the Examiner

assumes the Applicant intended "encoding includes setting code rates of the one or more codewords such that the last codeword has a lower code rate than the first codeword".

Claim 4 fails to recite any limitation in the form of a step further limiting the method of encoding of claim 1. Claim 4 instead recites that code rates set in claim 2 are set on the basis of a forward error correction algorithm, but does not recite any limitation or limitations in the form of a step or steps that is/are required so that the setting of code rates recited in claim 2 complies with a forward error correction algorithm.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope; Stephen P. et al. (US 6724327 B1, hereafter referred to as Pope) in view of Nieminen; Esko et al. (US 6437711 B1, hereafter referred to as Nieminen).

35 U.S.C. 103(a) rejection of claims 1 and 2.

Pope teaches encoding the information to be sent in the block code into one or more codewords by setting code rates of the one or more codewords such that the last codeword has a lower code rate than the first codeword (col. 4, lines 36-41 in Pope) the time for decoding a last codeword being less than available decoding time for decoding a first codeword (col. 4, lines 31-34 in Pope). Note: since paragraph [0043] in the Applicant's specification recites claim 2 as a positive limitation for achieving the intended outcome: **"a similar codeword error probability for each codeword considering available decoding time for decoding a last codeword will be less than available decoding time for decoding a first codeword"**; the Examiner assumes the Applicant intended "encoding includes setting code rates of the one or more codewords such that the last codeword has a lower code rate than the first codeword".

However Pope does not explicitly teach the specific use of identifying a length of information to be sent in a block code, which is necessary for encoding the variable length data in Pope.

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Nieminen, in an analogous art, teaches use of identifying a length of information to be sent in a block code (Abstract of Nieminen), which is necessary for encoding the variable length data in Pope.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pope with the teachings of Nieminen by including use of identifying a length of information to be sent in a block code, which is necessary for encoding the variable length data in Pope. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of identifying a length of information to be sent in a block code, which is necessary for encoding the variable length data in Pope would have provided necessary information needed to encoded variable length data (Abstract in Nieminen).

35 U.S.C. 103(a) rejection of claim 3.

Col. 4, line 52 in Pope.

35 U.S.C. 103(a) rejection of claim 4.

Col. 4, line 49-56 in Pope.

35 U.S.C. 103(a) rejection of claim 5.

The Abstract in Nieminen teaches an dividing data into blocks of equal size upper limit X. Clearly, if the length of the data is less than or equal to X bits (where X is a positive

integer), then one codeword is used. Nieminen teaches that if the length is greater than X bits and less than or equal to $Y=2X$ bits, then two codewords are used and Figure 2 in Pope teaches that the information to be sent in the block code is divided substantially equally between the two codewords. The Abstract in Nieminen clearly suggests if the length is greater than $Y=2X$ bits, then three or more codewords are used and col. 4, lines 36-41 in Pope teaches a code rate of the last codeword is set lower than a code rate of the first codeword

35 U.S.C. 103(a) rejection of claim 6.

Figure 2 in Pope.

35 U.S.C. 103(a) rejection of claim 7.

The Abstract in Pope recites "codewords may be of different lengths and/or different code rates, which clearly encompasses code rates of two last codewords to be lower than a code rate of the first codeword. Note: col. 4, lines 38-43 teach that lower code rates are used to compensate for shorter times to decode a particular codedword, which clearly suggests the use of lower code rates at the end of a data transmission when shorter times occur.

Claims 8 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Pope; Stephen P. et al. (US 6724327 B1, hereafter referred to as Pope) in view of

Nieminen; Esko et al. (US 6437711 B1, hereafter referred to as Nieminen) in further view of Zhuang; Xiangyang et al. (US 6757337 B2, hereafter referred to as Zhuang).

35 U.S.C. 103(a) rejection of claims 8 and 9.

Pope and Nieminen substantially teaches the claimed invention described in claims 1-7 (as rejected above).

However Pope and Nieminen does not explicitly teach the specific use of an antenna or OFDM.

Zhuang, in an analogous art, teaches use of an antenna or OFDM (col. 4, lines 10-11 and Figure 1 and 2 in Zhuang).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Pope and Nieminen with the teachings of Zhuang by including use of an antenna or OFDM. This modification would have been obvious to one of ordinary skill in the art, at the time the invention was made, because one of ordinary skill in the art would have recognized that use of an antenna or OFDM would have provided Multiple-Input-Multiple-Output (MIMO) detection and decoding communication (col. 1, lines 5-10 in Zhuang).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joseph D. Torres whose telephone number is (571) 272-3829. The examiner can normally be reached on M-F 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jacques Louis-Jacques can be reached on (571) 272-6962. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Joseph D. Torres
Primary Examiner
Art Unit 2112

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